BANGLADESH

GUIDELINES FOR REGIONAL DEVELOPMENT PLANNING

A Faculty-Student Project Of The
Department Of Urban And Regional Planning
University of Illinois at Urbana—Champaign

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A Prospectus

Department of Urban and Regional Planning
University of Illinois at
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909 W. Nevada Ave.
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Abstract

Funding is sought for a three and a half to four year project to devise and test innovative methods for regional development planning in developing countries. Bangladesh is being used as a case study. Preparatory work would be done at the University of Illinois for nine months, followed by two and a half to three years of field testing and revision on site in Bangladesh. The end product would be a handbook to be used to train substantial numbers of people, particularly younger people who have at least completed secondary school, to perform responsible regional planning tasks under proper supervision.

The total cost of the project is estimated as follows:

Phase 1	9 months	$ 27,772
Phase 2	3 years	124,432
		$152,204

Contents

Introduction

The following prospectus describes an approach to regional development planning for developing countries. It has particular reference to Bangladesh, but we hope it will have useful application in other countries with similar problems. The project is being carried out by the faculty and students of the Department of Urban and Regional Planning of the University of Illinois at Urbana-Champaign. We are circulating the prospectus to a number of public and private agencies to determine whether any of them might be interested in providing funding for our activities at this time.

The project has not been funded to date, but we believe our thinking and our progress now justify seeking funds for two purposes. The first purpose is to complete what it is feasible to do here on the campus. The second is to take our work into the field in Bangladesh for testing and correction as needed in order to bring it to an operational status.

What we are putting together is a procedural manual which is intended for use eventually by the government of Bangladesh, and by the governments of other developing countries which may find it helpful as an example. We believe that it should be used in two ways. First, it should serve as a basis for intensive short courses to train the many planners needed for regional development planning. (The government has pointed to the lack of trained planners as one of the principal reasons it has not already moved more forcefully toward regional planning.) Second, it should serve as a guide for planners working out in the field.

In order to appreciate what we are trying to do, it is necessary to remember that we are talking about a <u>comprehensive</u> approach to regional development planning. There is no lack of how-to-do-it manuals on all conceivable subjects, from poultry raising to design of school buildings to staffing and

equipping neighborhood health services units. But there is a surprising lack of manuals on how to bring these several elements together to create viable, balanced communities and regions. In fact, so far nothing has come to our attention which does the kind of thing we are trying to do. In the absence of such know-how, decisions are all too often made on a piecemeal, fragmented basis. Little or no attention is or can be paid to priorities. Projects frequently go forward which are of dubious value, but which make heavy demands on scarce resources.

It is precisely here that the planner makes his contribution. His expertise is precisely the ability to look at the big picture--to see the various parts, but to be conscious of their relationship to the whole; the ability to help those with whom he or she works not only to set timely, realistic goals, but to develop concrete step-by-step programs for reaching those goals, bringing together and interfacing all elements, agencies and persons who need to be involved.

Moreover, we believe that this kind of contribution--the expertise of the planner--is needed especially in developing countries. We also believe that it is possible to develop the kind of planners needed among the people of the country concerned, in sufficient numbers, and in a reasonable amount of time. The thought that we might be able to help in this direction has been one of our principal motivations.

Trying to work out our approach has involved us in many hours of seminars, workshops and individual study projects. We have searched our extensive library. We have contacted persons and agencies throughout the country by phone and letter, as well as consulted the many faculty on this campus who have worked in Bangladesh. We believe our efforts are finally beginning to show some results in piecing together the theoretical framework.

However, we are acutely conscious of the fact that there are distinct limits to what we can usefully do here. It may be useful initially to work at some remove developing the approach, as we have. But there are any number of activities going on already in Bangladesh, including government programs and the programs of international and voluntary agencies, many of which are going in our same direction, which we have not been able to learn enough about, even though one of the prime movers of this project is a graduate student from Dacca. In other words, our manual may be theoretically good, but it suffers from lack of contact with real life situations. What we need, therefore, is to get this project to Bangladesh as soon as possible, in order to fill in the gaps in our knowledge, make all of the necessary contacts, try out our concepts and procedures in the field, and make all of the modifications needed, small or large as the case may be.

In what follows, we discuss briefly our general and specific approach, and present samples from the work already accomplished, including tables, maps, and text. We conclude with tentative budgets for Phase 1 and Phase 2 of the future program, and vitae of two of the principal persons who would be involved.

General Approach

The general approach which we are following divides regional development planning into two principal categories. One category is made up of major elements such as large cities, the national transport system, management of water resources, or the national utility network, each of which is unique, as well as complex, and must be planned on an individual, custom-made basis. The Guidelines which we are developing are not intended to deal with these large-scale elements.

The second category consists of more localized elements. It focuses on the smaller towns, villages, and farm areas and their needs, such as employment, supplies and equipment, food, housing, water supply, sanitation, schools, health services, local transportation, flood protection, irrigation and drainage, credit, etc. These elements are not unique, but are common to all parts of the country. Furthermore, planning for these elements of regional development is simpler, and can be carried out by persons with more limited training, acting under proper supervision. The Guidelines which we are developing are, therefore, intended for use in these localized situations. In general, it is envisaged that ultimately there would be a team of such planners in each thana, consisting of from three to five or more persons at the thana headquarters, and two or more persons in each union council. The Guidelines are intended to be a basis for training them, as well as a continuing reference for their work out in the field.

It is assumed that the users will be primarily persons who have completed secondary school.

Thana and Union Council Planning

The basic unit of the planning operation which we propose is the thana. The planning team at the thana headquarters level, working in cooperation with relevant officials of the central government at the thana, divisional and district levels, and working with the people of the thana through the union councils, would lay out the general strategy for development. It would furnish basic information (population projections, estimates of food requirements, data on soils, geologic formations, plans of the central government, etc.) to the union council planners and supervise and backstop their work in preparing the detailed settlement and farm area plans. It would also consolidate information regarding needed labor, supplies, equipment, and investment for use of the central government officials; monitor progress; watch for and attempt to resolve bottlenecks; and in general, evaluate plans and programs to see whether they are accomplishing the purposes intended, and make adjustments as necessary.

The union council team would have two principal aspects to its work, with one or more planners assigned to each aspect as available. The first aspect would be planning for the development of non-farm settlements--usually, but not necessarily market centers. The second aspect would be planning for the development of the farm areas.

Working with the population projections, the recommended settlement pattern, and the estimates of food requirements furnished by the thana headquarters office, the settlement planner would work out detailed plans for the development of the community, together with implied requirements for land, labor, supplies, equipment and investment. This responsibility includes determining requirements for housing, water supply, sanitation, schools, health centers, mosques, commercial areas, internal and external

transport and communication. It includes determining the land required for these uses, determining how they should be located in relation to each other, how the development should be phased, and how much land should be earmarked for future growth. It includes determining how to prepare the sites, taking into consideration the need to elevate the buildings or provide some other form of protection against the annual floods. It includes working on plans for supplementary forms of food production which can be carried out in conjunction with the settlement, such as fish cultivation, egg and broiler production, and hydroponics. Finally, it involves estimating and reporting periodically to the thana headquarters office needs for labor, supplies and equipment, and investment capital.

The farm area planner would have a dual responsibility. On the one hand he would engage in planning for the development of farm production in the area, working with the thana headquarters planning team as well as the farmers themselves to set production targets in the light both of food requirements and of estimated productive capabilities. He would develop plans for improved land management, with particular reference to irrigation and drainage; plans for improved management practices in all aspects of crop, livestock and poultry; and plans for improved marketing procedures and facilities. He would keep track of the needs of the farm area for labor, supplies and equipment, and credit, and report them to thana headquarters.

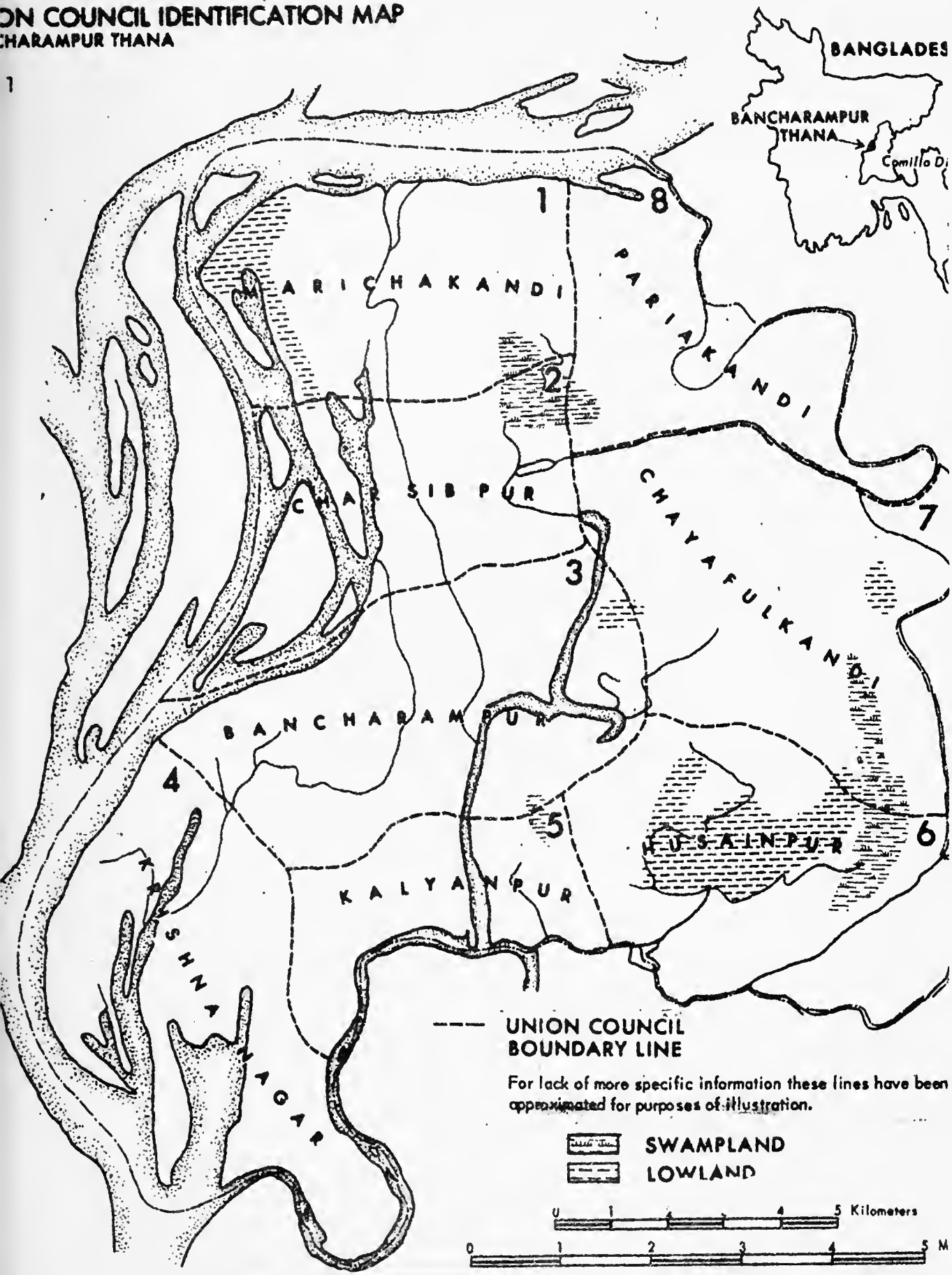
In addition to planning for enhanced farm production, the farm area planner would work with the rest of the union council planning team to plan the location and development of services which are needed over and beyond those provided in the market centers, such as schools, neighborhood health units, etc.

Succeeding pages of this prospectus present an outline of the handbook,

together with a summary of its status as of June 1, 1976; a sample section; and several maps which have been prepared to illustrate various phases of the process.

In order to develop our thinking, we have been using a particular thana, namely Bancharampur, as a case study. The following identification map shows the general location and size of the thana, together with the assumed location of the union council boundaries. (See Map #1)

ON COUNCIL IDENTIFICATION MAP
CHARAMPUR THANA



Outline and Status of the Manual

The *Guidelines for Regional Development Planning* would be divided into four parts. Part 1 would deal with the general approach and organization of the process. Part 2 would cover those phases of the work which would have to be carried out at the thana headquarters level, such as population projections, estimation of food requirements, etc. Part 3 would cover planning at the union council level, and would concentrate on providing for the needs of the non-farm settlements according to the magnitudes set forth in the population projections. Finally, Part 4 would concentrate on the farm areas, with the dual aspect of planning for enhanced farm production, and planning for certain additional services--health, education, transportation, etc., which need to be provided in the farm areas.

Considerable work has been done by the faculty and students engaged in this project, in classroom seminars and workshops, and in independent study projects. The following table shows the outline of the total work, and its status as of June 1, 1976.

Guidelines for Regional Development Planning in Bangladesh

Status as of June 1, 1976

Line Number	Classification	Research	First Draft	Second Draft	Final Draft
1	Part 1. General Approach	X			
2	Introduction				
3	Organization and Procedures				
4	The Thana Headquarters Team	X			
5	The Union Council Team	X			
6	Settlements	X			
7	Farm Areas	X			
8	Relation to the Division and the District				
9	Personnel and Training				
10	Carrying Out the Plans				
11	Part 2. Planning for the Thana as a Whole				
12	Population Projections	X	X	X	
13	Food Requirements	X	X	X	
14	Education	X			
15	Health Services	X	X	X	
16	Transport and Communication				
17	Estimating Requirements				
18	Labor	X			
19	Land	X			
20	Supplies and Equipment	X			
21	Investment				
22	Part 3. Planning for the Union Council: Settlements				
23	Estimating Needs				
24	Food	X	X	X	
25	Housing	X	X	X	
26	Water Supply	X	X	X	
27	Sanitation	X			
28	Food Processing and Storage	X	X	X	
29	Health Centers	X	X	X	
30	Schools	X	X		
31	Mosques				
32	Commercial Areas				
33	Designing the Physical Layout				
34	Land Requirements	X			
35	Spatial Arrangements	X			
36	Internal and External				
37	Transport and Communication				
38	Land Preparation	X			
39	Use of Ponds and Tanks	X			
40	Estimating Requirements				
41	Labor	X			
42	Supplies and Equipment	X			
43	Investment	X			
44	Part 4. Planning for the Union Council: Farm Areas				
45	Setting Production Targets	X			
46	Land Management				
47	Existing Land Use				
48	Soils and Their Capabilities				

Guidelines for Regional Development Planning in Bangladesh
(continued)

Status as of June 1, 1976

Line Number	Classification	Research	First Draft	Second Draft	Final Draft
49	Irrigation	X			
50	Drainage	X			
51	Production Management				
52	Crops	X			
53	Poultry and Livestock				
54	Marketing				
55	Housing	X			
56	Health Services	X			
57	Education	X			
58	Transport and Communication				
59	Estimating Requirements				
60	Labor				
61	Supplies and Equipment				
62	Credit				
63	Appendix				
64	1. Fish Cultivation	X	X	X	
65	2. Controlling Land Prices	X			
66	3. Poultry and Egg Production	X	X	X	

Illustrative Section: Population Projections

Population projections are basic to all planning. Numerous population projections are available for Bangladesh, but virtually all of them are only at the national level. An important feature of this handbook will be a step-by-step procedure for preparing population projections down to the thana, union council and farm area level, with needed detail such as farm owners, farm laborers, other non-farm rural population, and non-farm settlements. As shown in the status table, this section is already in draft form.

In order not to make this prospectus too long we are not including the whole draft of the population section. However, we do show in the next five pages two sample tables and three maps (Tables 5 and 8 and Maps 2, 3 and 4) which have been developed through this step-by-step procedure. In Table 8, the non-farm "market center" and "other non-farm population in towns" from Table 5 have been combined and rounded off to provide the single set of settlement projections shown in Map 4. A feature of this combining and rounding process is a new town, provisionally named Madhynagar. The average rate of growth of the market centers and the Thana headquarters would be about 500 percent during the 1975-1985 decade.

Table 5. Population Summary

Union Council	Total Pop.	FARM AREAS Total	Farm Owners	Farm Laborers	NON-FARM AREAS Total	Market Centers	Other Pop. In Towns	Other Rural Population
1975 (est)								
1.Marichakandi	32574	20876	18640	2,236	11,698	332	--	11,366
2.Char Sib Pur	27065	22325	19934	2,391	4,740	224	--	4,516
3.Bancharampur	37784	30017	26802	3,215	7,767	3,000	--	4,767
4.Krishna Nagar	50083	32306	28846	3,460	17,777	196	--	17,581
5.Kalyanpur	13496	13052	11654	1,398	444	192	--	252
6.Husainpur	21819	21119	18858	2,261	700	292	--	408
7.Chayafulkandi	31018	29874	26674	3,200	1,144	568	--	576
8.Pariakandi	21969	19928	17792	2,136	2,041	296	--	1,745
TOTAL	235808	189497	169200	20,297	46,311	5,100	--	41,211
1985 (est)								
1.Marichakandi	40517	23623	19913	3,710	16,894	1,128	482	15,284
2.Char Sib Pur	34087	24149	20356	3,793	9,938	1,152	2,112	6,674
3.Bancharampur	48813	32046	27013	5,033	16,767	12,000	--	4,767
4.Krishna Nagar	63452	34221	28846	5,375	29,231	1,633	937	26,661
5.Kalyanpur	16768	13950	11759	2,191	2,818	666	1,873	279
6.Husainpur	27980	26274	22147	4,127	1,706	1,254	--	452
7.Chayafulkandi	37546	32651	27523	5,128	4,895	1,559	2,697	639
8.Pariakandi	25593	21107	17792	3,315	4,486	1,008	1,691	1,787
TOTAL	294756	208021	175349	32,672	86,735	20,400	9,792	56,543

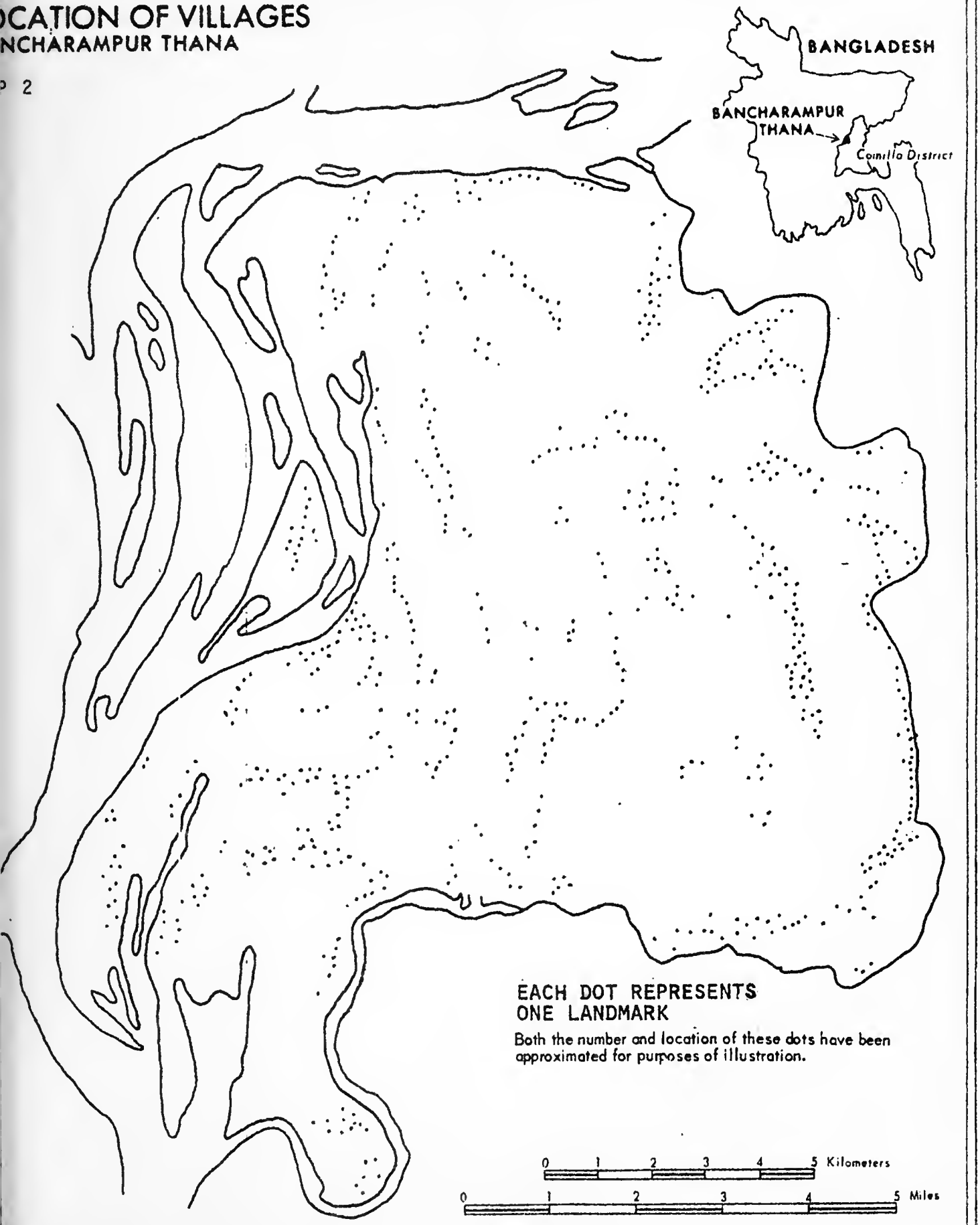
Table 8. Non-Farm Settlements In Rank (1985) Bancharampur Thana

(Rank) Name	1975	1985	Net Increase No.	Net Increase %
(1) Bancharampur	3,000	12,000	9,000	492
(2) Madhynagar	--	6,500	6,500	--
(3) Krishna Nagar	200	2,575	2,375	1,188
(4) Kalyanpur	450	2,550	2,100	467
(5) Marichakandi	350	1,600	1,250	357
(6) Chayafulkandi	1,150	1,550	400	35
(7) Husainpur	300	1,250	950	317
(8) Char Sib Pur	225	1,150	925	411
(9) Pariakandi	300	1,000	700	233
Thana Totals	5,100	30,175	25,075	492

NOTE: Bancharampur is the thana headquarters. Madhynagar is a new town. All other settlements are now market centers which are to be expanded.

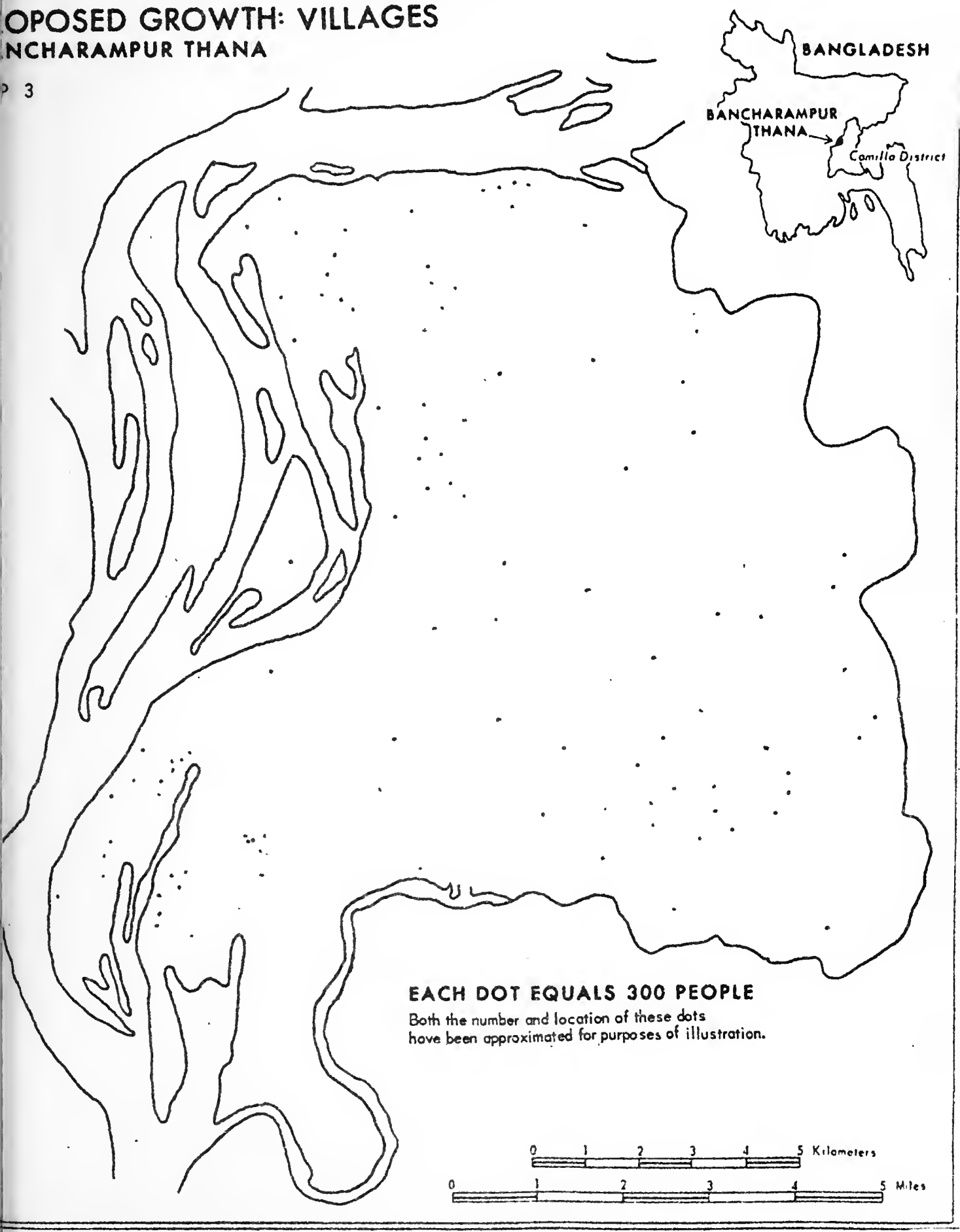
)CATION OF VILLAGES
NCHARAMPUR THANA

P 2



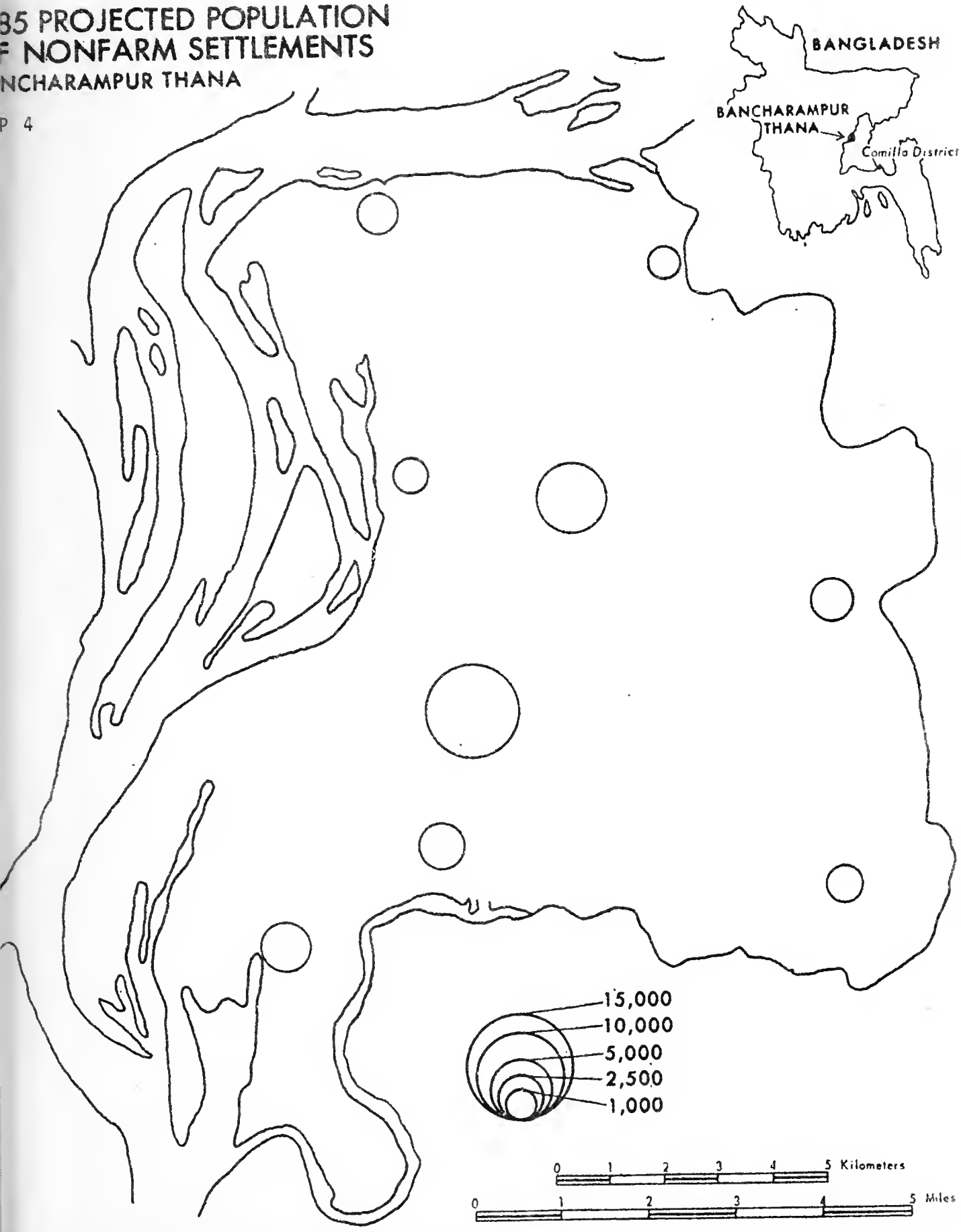
OPOSED GROWTH: VILLAGES
NCHARAMPUR THANA

P 3



85 PROJECTED POPULATION
F NONFARM SETTLEMENTS
NCHARAMPUR THANA

P 4



Illustrative Section: Housing

Even though resources may not permit actually building houses for the population which will be moving into the non-farm settlements, nevertheless it is essential that the planner know how many houses will be required, and how much land will be needed so that he can lay out the physical design of the community and insure that essential minimum services, such as community water supplies, sanitation, etc., are provided at the proper places. The next several pages are a part of the draft of the manual which covers planning for housing.

Planning for Housing Needs

Our purpose here is to show how the planner should deal with housing needs in his particular community.

As soon as we begin to think about housing, some questions come to mind:

1. Why do we need to estimate housing needs?
2. How do we estimate housing needs?
3. How much land is required and how should we place the houses?
4. How much and what kind of materials will be required?

Now, let us try to answer these questions one by one.

Question No. 1: Why do we need to estimate housing needs?

The reason you need to make an estimate of housing needs in the community is that you have to have this estimate in order to be able to plan the community properly. You know that the divisional and thana plans call for expanding your community quite rapidly over the next ten years. You have been given an estimate of the number of people who will be coming to live in the community. Your job is to make sure that each family has a place to put up its house, and that all of the houses are arranged in such a way that people and vehicles can move around the community easily and that families have good access to tubewells for their water supply and to toilets, as well as to the mosque, the market, the schools, the health center, and the park. If the community isn't planned properly, it is likely to grow haphazardly with some families having more space than they need, and others not enough, services not in the right places or non-existent, streets and pathways crowded and crooked, making it difficult generally for everybody to meet their daily needs.

It is especially important to plan for houses because they take up more land than anything else in the community. It is important to get them arranged

right for the convenience of the families living in them. It is also important to use the land as economically as possible, and to save as much as you possibly can for producing food and fiber for the people's needs. Unplanned communities very often use more land than they need.

To do these things, you need a plan for how to arrange the houses over the next ten years, and where the houses are to be built the first year, the second year, the third year and so on. So to start making the plan, you have to begin with an estimate of how many houses you are going to need.

Question No. 2: How do you estimate housing needs?

To calculate present and future housing needs for your community, you will need five pieces of information. They are: (1) the present population of the community, (2) the projected ten-year population increase, (3) the present number of families in the community, (4) the projected ten-year increase in the number of famlies in the community, and (5) the number and type of existing houses already available and adequate for habitation.

The figures for Items 1-4 will come from the thana headquarters planning office. Item 5 you will get by counting the existing houses in the community and subtracting any which are simply unfit to live in.

The number of new houses you will need is approximately the same as the projected increase in families (Item 4). However, you need to make a couple of minor adjustments. You have to add in enough additional houses to replace the houses you found to be unfit. You also will have to replace any houses that may be destroyed by floods, fires, hurricanes, etc., or torn down to make room for public improvements. These two adjustments will increase your estimate by about three to four percent.

The last thing you need to know is something about the sizes of these houses. Some will be small, some medium sized, some large, depending on the

sizes of the families which occupy them. You need to have some idea on this, because the way you lay out the housing sites, and the amount of land you will need, depends on the size of the houses.

This is difficult to guess exactly, but for practical purposes you can assume that the sizes of the families coming in will tend to run about the same as in the country as a whole. Here is what the Census shows on this subject.

Small families	(1 to 4 persons)	40%
Medium-size families	(5 to 7 persons)	37%
Large families	(8 or more persons)	23%
Average size of family.		5.6 persons

In other words, in laying out the housing sites in your community plan, you can say that you should provide for about 40 percent small-size houses, about 37 percent medium-size houses and about 23 percent large-size houses.

Here is how the figures would look in a typical case. The example we have chosen is the market center of Marichakandi.

Classification	1975	1985	Increase	
			Total	Each Year
Number of people	350	1,600	1,250	125
Average number of people in a family	5.6	5.4	--	--
Number of families	63	299	236	23
Housing Needs				
Small (40%)	25	120	95	9 or 10
Medium (37%)	23	110	87	9 or 10
Large (23%)	15	69	54	5 or 6
Allowance for replacements (3%)	--	7	7	1
Total Needs	63	299	243	24 to 26

Looking at these figures, we find that in Marichakandi there were 350 people in 1975. Over the next ten years, Marichakandi is supposed to grow

to about 1,600 people, or about 125 people a year. The average family will have around five to six persons, so you can estimate that there will be an increase of about 236 families. Dividing these additional families up by size, you estimate that about 95 will need small houses, about 87 will need medium-size houses, and about 54 will need large houses.

Now, not all of these houses will be needed at once. Some years, you will need more than others, but on the average you will need around 24 to 26 houses a year over the ten-year period.

Question No. 3: How much land is required, and in what pattern should we place the houses?

Once you have an idea of how many houses are required, you can turn your attention to the amount of land which will be needed for these houses.

The amount of land needed will depend largely on two factors: (1) the size of the houses, and (2) the plan you make showing where the houses are to be located and how they are to be arranged.

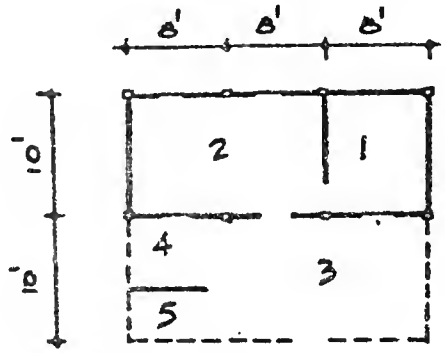
On the next page there are some diagrams which show how you might work out the design for the housing areas. Diagram 1 shows what the floor plans might be like for typical small, medium-sized, and large houses. Diagram 2 shows how these houses might be grouped in clusters around a tubewell. At the present time, the government is trying to provide one tubewell for every 150 people. This cluster would have 30 houses, containing about the number of people for one tubewell. Toilets would be located on each of two corners, designed to give as much privacy as possible.

Each house would have its own site, and would share the courtyard in common with the other families. The cluster of houses would measure 171 x 374 feet. Multiplying the length by the width would give us 63,954 square feet. Now we know that an acre contains 43,560 square feet. Therefore, if

DIAGRAM 1 INDIVIDUAL HOUSE PLANS

SMALL HOUSE

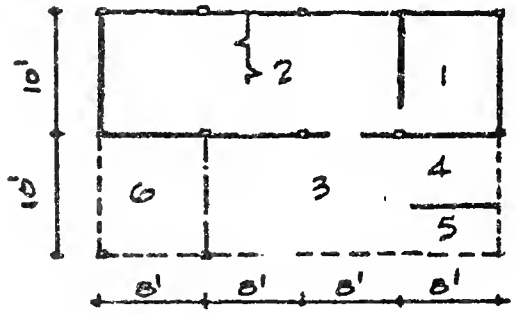
Total area of the unit = 20' x 24' = 480 sq.ft.



1 PARENTS' ROOM 4. KITCHEN
2. FAMILY ROOM 5. BATH/WASH
3. COURT-YARD 6. RM. 3 FOR TYPE III

MEDIUM AND LARGE SIZE HOUSES

Total area of the unit = 20' x 32' = 640 sq.ft.

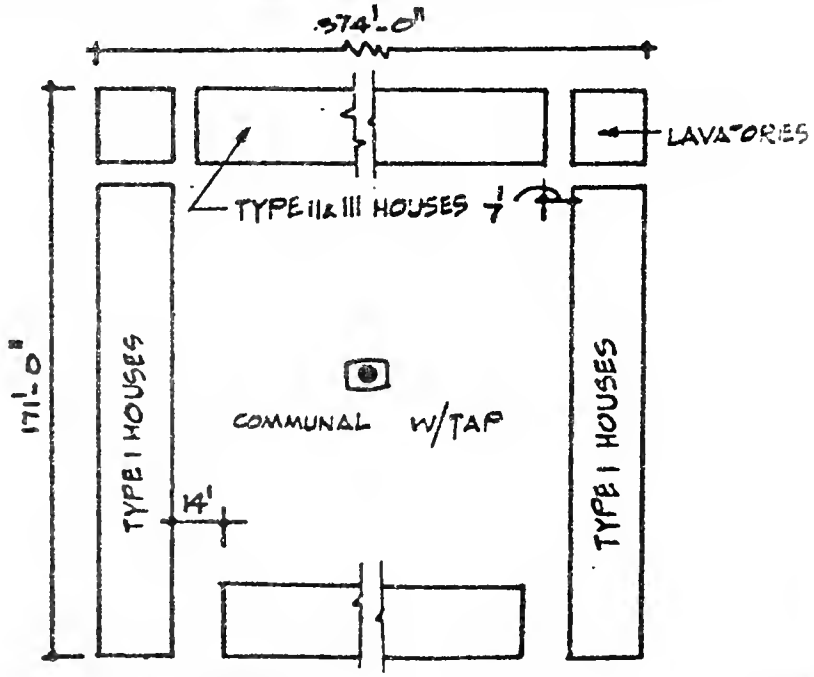


Temporary bamboo partition for sleeping.

DIAGRAM 2 CLUSTER LAYOUT (For 30 Houses)

SMALL	12
MEDIUM SIZE	11
LARGE	7
TOTAL	30

Total Area of the Cluster - 171 x 374' = 63,954 sq. feet or about 1½ acres



you divide the size of the cluster (63,954 square feet) by the number of square feet in an acre (43,560), you will find that you need just about 1½ acres for these 30 houses.

Now look at it another way. We said a moment ago that this cluster, which would have 30 houses and would need an acre and a half of land area, would take care of up to 150 people. It follows that if 1½ acres will take care of 150 people, then what we are talking about is one acre for every 100 persons. Thus, if you want to estimate how much land you will need to take care of the total expansion you are planning for Marichakandi for the next ten years, you would take the increase in population, 1,250, and divide it by 100. In other words, you would need about 12.5 acres.

In order not to take land away from farming any more rapidly than you have to, it would be a good idea to provide for about one cluster of houses a year in this example. This would be about the amount of land owned by one farm family. It would also mean that you would make the most efficient use of the tubewells, and you would only have to ask the government to put in one tubewell a year as the community grew.

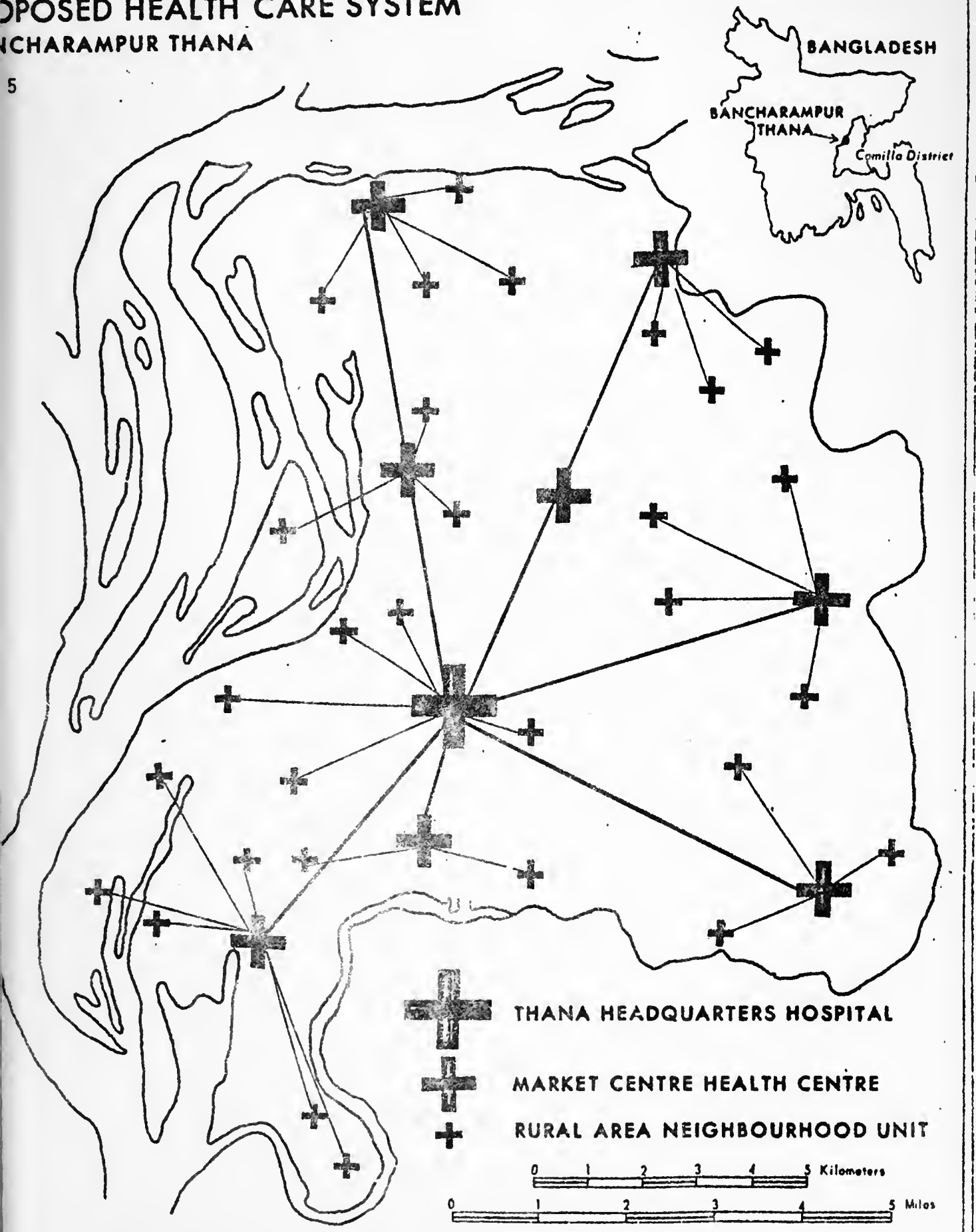
Illustrative Section: Health Care

One of the sections which is currently in draft form deals with health care. Again, in order not to make the prospectus too long, we will not present any pages from this section. The general nature of the system, however, is shown in the following map. (See Map #5) The section covers the general requirements of the various elements of the system, such as location, space, materials, personnel, types of cases to be handled, etc., so that the planner can work intelligently with health officials in providing for these essential services.

OPOSED HEALTH CARE SYSTEM

NCHARAMPUR THANA

5



Tentative Budget

We estimate that it will take three and a half to four years to complete the manual and bring it to operational status. The work would be divided into two phases. The first phase would be completing what it would be feasible to do on the University of Illinois campus. This phase would last for nine months. Under a special arrangement with the Department, Dr. Keyes would continue part time as project director. (He will become Professor Emeritus as of September 1, 1976.) Three graudate research assistants would be employed, and additional student input would be obtained by way of seminars and workshops.

The second phase would be field testing the manual in a selected thana in Bangladesh. This phase is estimated to last two and a half to three years. A project office would be maintained in Dacca and a field office in a selected thana headquarters. The combined staff of the two offices would be 25 persons. Dr. Keyes would continue as a consultant by correspondence in the United States, and would make one trip per year to Bangladesh. If Dr. Keyes is not available for the trip, an alternative consultant would be supplied.

The total cost of the project would be as follows:

Phase 1	$ 27,772	(9 months)
Phase 2	$124,432	(3 years)
Total	$152,204	

PHASE 1

(Completion of Guidelines)

Project Director*		$7,000	
Graduate Research Assistants		7,200	
(2) Quarter-time	@1,800		
(1) Half-time	@3,600		
Computer Services		500	
Typing and Printing of Report		2,000	
Supplies		500	
Travel		1,200	
		SUB-TOTAL	18,400
		University Overhead	9,372
		TOTAL	$27,772

*Dr. Keyes will become Professor Emeritus of Urban and Regional Planning on September 1, 1976. Under a special arrangement with the Department, he would serve as project director of Phase 1 on a part-time basis.

PHASE 2

(Field Test of Guidelines)

Part A - Project Office, Dacca		3 yr. cost	
Project Director	@400/month	$14,400	
Radio Communication Equipment	175	175	
		Part A TOTAL	$ 14,575

Part B - Field Office, Thana Headquarters			
Field Director	@ 300/month	10,800	
(2) Planners	@ 150/month	4,500	(2.5 yrs.)
Bookkeeper	@ 90/month	3,240	
Typist	@ 60/month	2,160	
Peon	@ 30/month	1,080	
Rent	@ 75/month	2,700	
(2) Bicycles	@ 100	200	
Motorcycle	@ 700	700	
Pickup Truck	@4,500	4,500	
Gasoline	@ 50/month	1,800	
Maintenance (all)		500	
(2) Typewriters	@ 250	500	
(2) Overhead Fans	@ 100	200	
Radio Communication Equipment	@ 175	175	
(3) Calculators	@ 50	150	
Mimeograph	@ 500	500	
Furniture	@ 750	750	
Supplies	@ 500/year	1,500	
Electricity	@ 5/month	180	
		Part B TOTAL	$ 36,135

Part C - Union Council Staffs			
(18) Planners	@ 50/month	27,000	(2.5 yrs.)
Rent (8 offices)	@ 10/month	2,400	(2.5 yrs.)
(18) Bicycles	@ 100	1,800	
Maintenance (all)		100	

Part C - Union Council Staffs (continued)

Furniture		$ 850	
(18 desks, 36 chairs, 9 benches, 9 cabinets)			
(8) Radio Communication Equipment	@ 175	1,400	
Supplies (9 offices)	@ 5/month	1,350 (2.5 yrs.)	
		Part C TOTAL	$ 34,900

Part D - Consultant (U.S.A.)

Consultant	@4,500/year	13,500	
Visits (one trip per year)	@1,200/trip	3,600	
Expenses	@ 500/year	1,500	
		SUB-TOTAL	18,600
		University Overhead	8,910
		Part D TOTAL	$ 27,510

PHASE 2

(Total Three-Year Cost)

Part A	Project Office	$ 14,575
Part B	Field Office	36,135
Part C	Union Council Staffs	34,900
Part D	Consultant (U.S.A.)	27,510
		$113,120
	10% Contingency	11,312
		$124,432

SUMMARY

Phase 1	$ 27,772
Phase 2	124,432
TOTAL	$152,204

Vitae

For informational purposes, we include here vitae of the two principal persons who have been connected with this project since its inception: Dr. Scott Keyes, Professor of Urban and Regional Planning and Mr. Hasan M. Huq.

Inquiries should be addressed to:

Dr. Michael P. Brooks, Head
Department of Urban and Regional Planning
University of Illinois at Urbana-Champaign
909 West Nevada Avenue
Urbana, Illinois 61801

September 15, 1975

VITA

Scott Keyes
505 West William Street
Champaign, Illinois 61820
217-352-9843

Date and Place of Birth: Jamestown, New York. May 3, 1910.

Marital Status: Married, four children, ages 25 to 34.

Education

Elementary and high schools, Jamestown, New York, and Lexington, Kentucky.

A.B., Pennsylvania State College, 1932.

M.A., Pennsylvania State College, 1933.

Ph.D., University of Wisconsin, 1950. Thesis, "Housing Market Areas in the United States: Number, Size, Geographical Distribution and Recent Growth."

Experience

September, 1959 to present, Associate Professor (now Professor) of Urban and Regional Planning, University of Illinois at Urbana-Champaign, with split appointment between Department of Urban and Regional Planning and Bureau of Urban and Regional Planning Research. Special fields of interest: regional planning, comparative planning, metropolitan planning, planning in underdeveloped areas, regional accounting, and general aspects of urban and regional research as well as growth policy and fiscal policy.

October, 1953 to June, 1959, Economic Consultant, Puerto Rico Planning Board, assigned to general and specific aspects of comprehensive regional planning.

September, 1946 to October, 1953, Assistant Professor of Economics, Pennsylvania State College. Taught courses in principles, current economic problems, national planning, housing and urban planning, comparative economic systems, consumption, real estate.

October, 1944 to September, 1946, Research Analyst, Master Plan Division, Cincinnati Planning Commission. Special assignment, industrial and residential land requirements.

June, 1940 to September, 1944, research work with United States Housing Authority, and National Housing Agency, Spent year 1942 in New York City as Regional Research Adviser to FPHA, covering programs in New York, Pennsylvania and New Jersey. Continued same function briefly with NHA before returning to Washington.

September, 1937 to June, 1940, graduate work and part-time teaching in urban land economics, University of Wisconsin. Also conducted Real Property Inventory for Madison Housing Authority.

July, 1934 to September, 1937, Project Director, "Real Estate Survey of Pittsburgh and Allegheny County," a WPA project sponsored by University of Pittsburgh and Pittsburgh City Planning Commission.

July, 1933 to July, 1934, research work, Pennsylvania State Employment Service.

Publications

At University of Illinois:[1]

Personal Income in Illinois: 1950, 1954, and 1958. 1961, 128 pages, mimeographed. (A monograph describing and analyzing regional income shifts during the period indicated.)

Personal Income in Illinois Counties: 1950, 1954, 1956, 1958 and 1959. With Felix C. Rodgers and Wallace E. Reed. 1962, 42 pages, offset. (A statistical handbook supplementing the above publication, with estimates given for two additional years.)

Regional Income Patterns in Illinois During the 1950's. Bureau of Community Planning Newsletter, Volume III, No. 2, April, 1963.

Urban and Regional Studies at U. S. Universities. 1964, 127 pages, offset. Johns Hopkins Press, Baltimore, Maryland. (A survey conducted for Resources for the Future, Inc.)

A Guide to Federal Programs for Illinois Communities. 1967, 208 pages, offset. (Detailed information on more than 400 Federal programs.)

Intra-County Allocation of County Income Estimates: A Potential Tool for Local Economic Studies. (With Betty C. Churchill) 1967, 36 pages, mimeographed. (A methodological paper describing and illustrating a new technique developed by the authors.)

Focal Points in Urban Research. In Research Digest, Volume 14, No. 2, Fall-Winter, 1967. (Based on a paper given at the Conference on Cooperation and Communication in Urban Research held at City University of New York, February 1, 1967.

Toward a National Urban Research Program. Bureau of Community Planning Newsletter, Volume VIII, No. 1, November, 1967.

Reflections on the Intergovernmental Cooperation Act of 1968. Workshop on Intergovernmental Planning Systems. University of Illinois at Urbana-Champaign. March 24, 1969. 16 pages.

Statement Concerning S. 3640, the Urban Growth and New Town Development Act of 1970. Hearings before the Subcommittee on Housing and Urban Affairs, Committee on Banking and Currency, U. S. Senate, Washington, D. C. 91st Congress, 2nd Session, July 24, 27 and 30, 1970. 11 pages.

Statement Concerning S. 1618, the Community Development Act of 1971. Hearings before the Subcommittee on Housing and Urban Affairs of the Committee on Banking, Housing and Urban Affairs. U. S. Senate, July 12, 13 and 14, 1971, 7 pages.

(Keyes, Scott and students.) Comprehensive Planning Act. Urbana, Illinois. 1971. 35 pages. (Draft of a model national planning act later incorporated in S.3050, the "Balanced National Growth and Development Act of 1974," 93rd Congress, 2nd Session, February 25, 1974.)

"The Public Sector in Champaign County, Illinois," in Illinois Business Review. Volume 29, No. 11. December, 1972. Page 6 ff.

The ECE Program in Urban and Regional Research, With Special Reference to the Information Function. Stockholm, Sweden. The National Swedish Council for Building Research. September, 1973. 40 pages. Mimeographed.

Conspectus for Areawide Planning: A Fiscal Approach. Urbana, Illinois. University of Illinois, Bureau of Urban and Regional Planning Research. December, 1973. 172 and xi pp. Multilith.

(Keyes, Scott and students.) Growth Policy for Illinois. May, 1975. 23 pages and appendices and 22 maps. (A proposal to the Illinois Commission on Intergovernmental Cooperation.)

In process:
Keyes, Scott and others. Coordination and Integration of Programs through an Areawide Advisory Budget. (About 350 pages. Advance drafts of certain chapters available on request.)

At Puerto Rico Planning Board:[2]

A Development Plan for the Island of Vieques. 1954, about 75 pages, mimeographed.

Methodology of Town and Country Development Planning. 1955. (Paper prepared for delivery by Chairman of Planning Board at Caribbean Commission Conference on same subject held in Trinidad, November, 1955. I also attended this conference and participated on the drafting committee which prepared the final report.)

Machine and Man in Puerto Rico. 1956, 35 pages, offset. (Paper prepared for 8th International Conference of Social Work, in Munich, Germany.)

An Agricultural Development Model for Puerto Rico. 1956, 60 pages, mimeographed.

Next Steps Ahead in Coffee. 1957, 40 pages, mimeographed.

Towards a Comprehensive Regional Plan for Puerto Rico. 1957, 50 pages, mimeographed.

Methods of Analyzing Agricultural Reaources and the Demand for Agricultural Products. 1958. (Paper prepared for an International Seminar and Workshop on Economic Planning held in San Juan, Puerto Rico, October 27 to November 28, 1958. 66 pages, mimeographed.)

Comprehensive Regional Planning in Puerto Rico. 1958, 75 pages, offset. (Paper prepared for Tokyo Conference on Industrialization and Urbanization. July 28 to August 8, 1958.)

Growing and Grinding: Regional Trends and Needs in the Puerto Rico Sugar Industry. 1959, 150 pages, mimeographed.

At Pennsylvania State College:

Economics: Trends and Issues, A Book of Readings. 496 pages, 1st edition 1952, 2nd edition 1954. Whittier Books, Inc., New York. (Collateral text used for principles courses, used at Penn State, Yale, Stanford, etc.)

At Cincinnati Planning Commission:

Industrial Land Requirements: 1946, 75 pages, offset. (Master Plan Report)

Residential Areas. 1947, 150 pages, offset. (Master Plan Report)

In Washington:

Technique for a Survey of Low Rent Housing Needs. 1940. (Mimeographed, United States Housing Authority. I prepared first draft.)

At University of Wisconsin:

Readings in Urban Land Economics. 1939, 600 pages, mimeographed. (Text in urban land economics course.)

In Pittsburgh:

Two casebooks of real estate statistics for Pittsburgh and Allegheny County, published by Bureau of Business Research, University of Pittsburgh. Also several articles in Pittsburgh Business Review.

Miscellaneous:

Peace: The Second Try. 1956, mimeographed, 125 pages. (Manuscript of unpublished book dealing with need for disarmament, economic and social development of underdeveloped areas, etc.)

Also several articles and book reviews for professional and lay journals, newspapers, etc.

Other Activities

Co-founder and former Chairman, Instituto Puertorriqueno de Investigaciones Sociales (Puerto Rican Institute for Social Research), a voluntary citizen's research group

Member, U. S. Delegation, First International Conference on Urban and Regional Research, Stockholm, Sweden, May, 1968.

Invited guest, Second International Conference on Urban and Regional Research, Dublin, Ireland. October, 1972.

From 1960 through 1970, Editor of Research Digest, later the Quarterly Digest of Urban and Regional Research. An international journal of abstracts of current and recently completed research.[3]

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[1]All items published by Bureau of Community Planning (now Bureau of Urban and Regional Planning Research) unless otherwise noted.

[2]All items published by the Puerto Rico Planning Board unless otherwise noted.

[3]The Quarterly Digest was discontinued after December, 1970.

Hasan Mustafa Huq

16th June 1946 — Date of Birth.

Permanent Address
738 Dhanmandi R.A. Road 18 Dacca-5, Bangladesh.

Education

Sept. 1970 — B. Arch.
University of Engineering and Technology
Lahore, Pakistan

1976 — M.Arch.
University of Illinois
Urbana-Champaign, USA

Working Experience

Jan.'71 — Worked for a firm of consulting engineers in Dacca, Bangladesh in various capacities. I started as a junior architect and was working as a project architect when I left.

Initially I worked on shop drawings and inspection works of the following projects.

1. Designed an acoustic ceiling for an auditorium for a thousand people for the University of Dacca.

2. Designed the ceiling and lighting system for a small auditorium for the Department of Business Administration of the University of Dacca.

3 Worked on the building finish scedules for an experimental school of the Department of Education of the University of Dacca.

4. Worked on revisions of plans for a dormitory for the 'Bangladesh Rice Research Institute'

Total Design Responsibility

5. Design of Residential Complex for the Bangladesh Rice Research Center. This consisted of 84 apartments of four

different types.

6. Designed a shopping center for a small town.

7. Designed a Martyr's monument for the University of Agricul
The design was selected in a competition.

Projects in the Design Stage.

These are projects for which I have done the preliminary designs but which have not been constructed yet. Some of these are held up for want of funds and others have been dropped for the time being.

8. Students Union building for the University of Dacca.

9. Academic building for the Science Faculty.

10. Multi-storied dormitory complex for co-eds at the University of Dacca.

11. Designed a high-rise apartment complex for the House Building Finance Corporation. (A state owned building corporation.)

12. Collaborated on the design of a Master Plan for an Air Force base for the Government of Bangladesh. This job included collaboration with landscape, drainage and surveying experts.

13. Designed a mosque for the University of Agriculture.

14. Designed a shopping center for a suburb of Dacca.

May 1974 15. Designed an auditorium for the University of Agriculture.

Other Experiences.

Summer & Fall 1975 At the University of Illinois I took two semesters off from the Architecture program to work on developing a guideline for 'Regional Development Planning for Developi Countries' with a case study on Bangladesh.

Travel.

I have travelled and visited the following countries and have excellent contacts in many of them.

Pakistan, Afghanistan and Iran.

Nepal, India, Kuwait, Lebanon, Italy, France, Holland and England.

USA and Canada.